



JUNIOR

Plug and Fly

Instruction Manual



*A classic.
updated.*





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Introduction

Thank you for purchasing this Duraflly Retro series 'Junior' model. The Junior is the world's first truly 'Plug and Fly' model that is based on a classic 'Vintage' design of yesteryear. While a classic design, this model comes with all the benefits and convenience of a modern day electric powered EPO model. The Junior perfectly captures the essence of Vintage flight and design. With its charismatic outline, beautifully simulated 'built up construction' and classic finish. However, unlike traditional built up models, construction time has been reduced to an absolute minimum thanks to the Plug and fly nature of the Junior.

This retro series model, like the Pioneer before it, comes with all electronics, control horns and push rods pre-installed and all components pre-assembled. No glue is provided, as none is needed! The Junior simply screws/bolts together with great ease and simplicity, being ready for flight in a very short space of time due to its low part count. Even the undercarriage comes pre-assembled for you. The wing is easily removable for transport and the battery and electronics are easily accessible too through the high quality plastic moulded battery hatch.

With the Retro series Junior, you'll be rewarded with an extremely relaxing model to both build and fly, with all the levels of quality and value you've come to love from a Duraflly model. Look out for more 'Retro' series models coming soon from Duraflly.

Specification

Wingspan: 1100 mm /43.3 in.

Length: 765 mm / 30.1 in.

Weight: 695 g / 24.5 oz

Propeller: 8x6(Two blade propeller)

Servo's: 4 x 9g (included)

Recommended radio system: 4CH

Battery: 11.1V, 1300 mAh Li-Po

ESC: 20A Brushless (included)

Motor: DST-1100 (included)



Required to complete model

Being in a 'Plug n Fly' format, the Junior will still require some additional electronic components to be ready for flight. Duraflly recommends these Turnigy products below from HobbyKing.com for ease of installation, optimum performance and great value. Available directly from HobbyKing.com



OrangeRx T-SIX 2.4GHz 6CH
Programmable Transmitter:
Part No. 9403000001



OrangeRx R615 6Ch 2.4Ghz
Receiver:
PartNo. R615

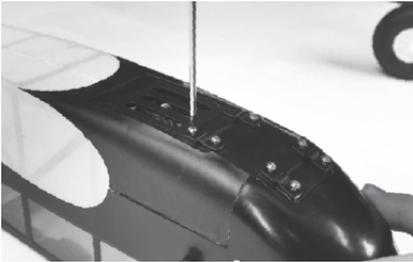


-Turnigy nano-tech 1300mAh
3S Lipo:
Part No. N1300.3S.45

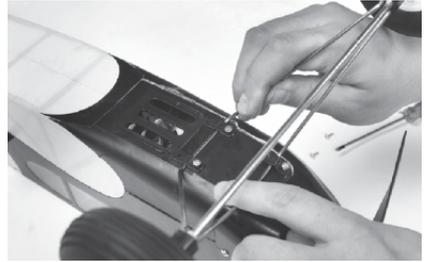
Warning

- * Please pay close attention to the warnings and guidance outlined in this manual. Failure to do so could result in damage to the product, property and cause serious injury. Duraflly shall not be held responsible for any damage or harm caused by the misuse of its products.
- * This model is not a toy. Please use it with care and consideration to all around you. Special considerations must be given to any national/local by-laws and restrictions when looking to fly this model. If unsure, seek assistance from your national governing body for model flying.
- * This model is for advanced beginners, intermediate and advanced model pilots alike. It is highly recommend that you seek the assistance of an seasoned model pilot if you have any doubts over your ability to fly this model safely.
- * Age recommendation: not for children under 14 years old. This product is not intended for use by children of any age without direct the supervision of a responsible adult.
- * This model uses a recommend Lithium Polymer battery (not supplied) to power all airborne electronics.
- * Read carefully the operating guide lines and safety instructions supplied with your choice of battery.

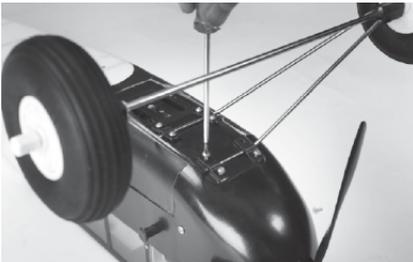
Assembly



1. Temporarily remove the undercarriage mounting plates and screws from the bottom of the fuselage using the supplied screw driver, as shown.



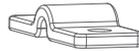
2. Locate the pre-assembled undercarriage and place in the moulded slots on the fuselage underside as shown.



3. Using the mounting plates and screws you've just removed, mount the undercarriage firmly in place using the screw driver as shown.



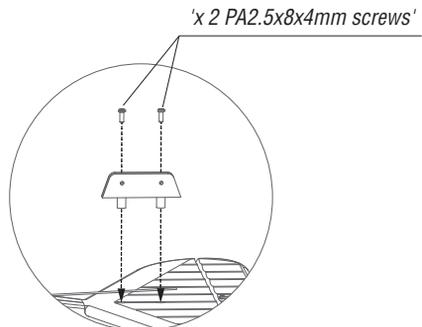
'x 8 PA2x8x3mm screws'



'x 4 Mounting plates'



4. Install the horizontal stabilizer to the tail as shown, using the screws detailed.

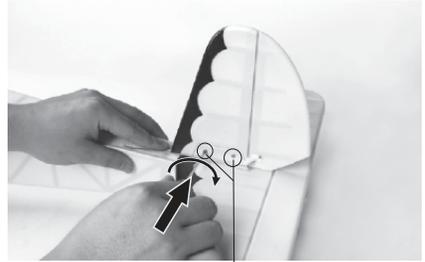


'x 2 PA2.5x8x4mm screws'

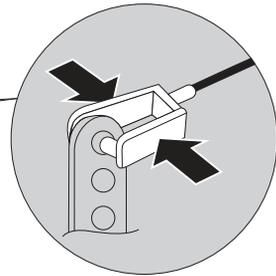
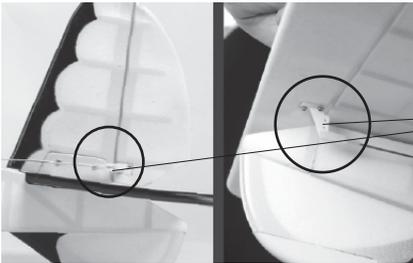
Assembly



5. Install the vertical stabilizer to the tail as shown, using the screws detailed.



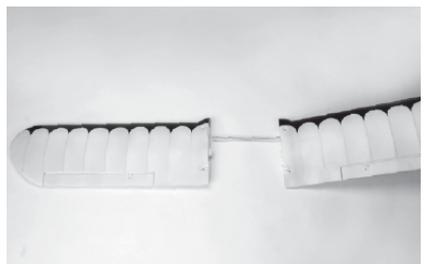
'x 2 PA2.5x8x4.5mm screws'



6. Now connect the pre-installed push rod clevises to the tail control horns as shown.

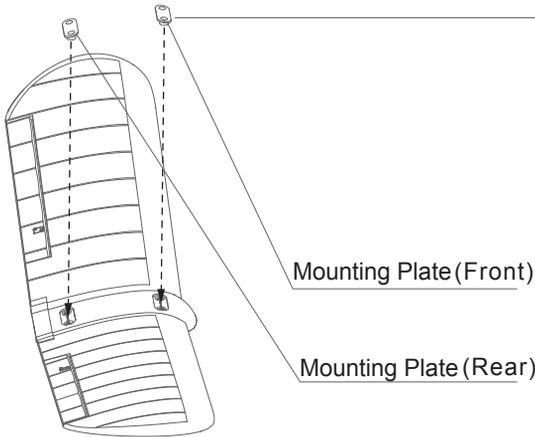


7. Insert the aluminum dihedral spar into one side of a wing panel as shown.



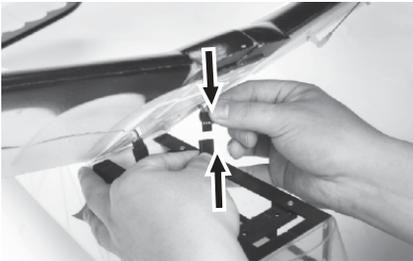
8. Insert the remaining wing panel onto the spar and push together, ensuring both panels are level with each other at the center.

Assembly



**Note : "F"
front connector.**

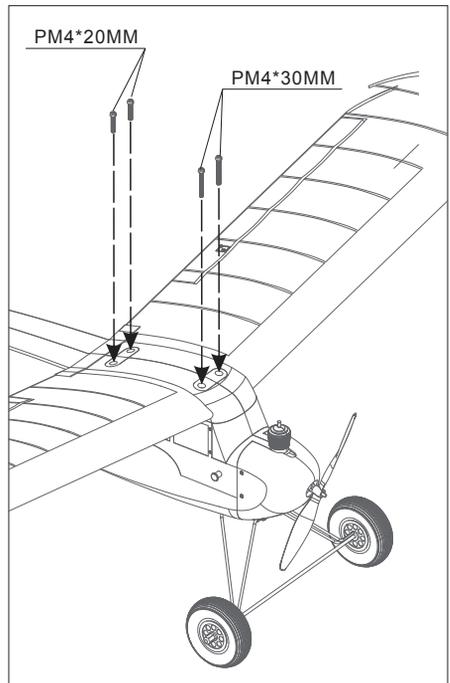
9. Locate and install the wing mounting plate as shown. Make note of the correct orientation of these.



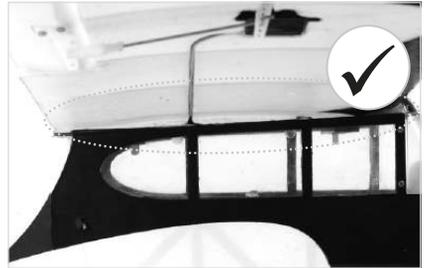
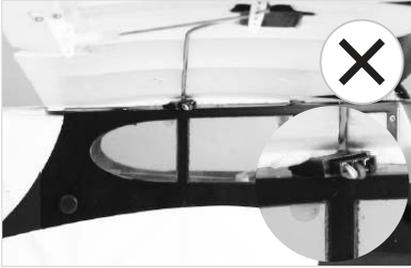
10. Connect the aileron servo's to the pre-installed Y-lead in the fuselage.



11. Now secure the wing to the fuselage using the supplied nylon wing bolts, 20mm bolts for the rear, 30mm bolts for the front.



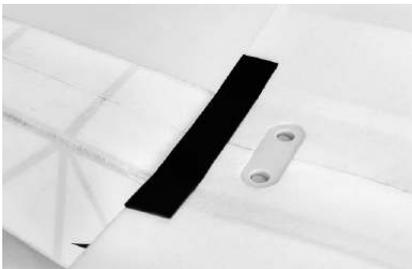
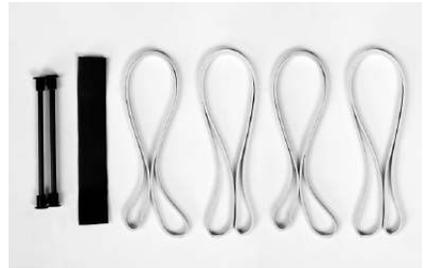
Assembly



Ensure that no servo wires are caught between the wing and the fuselage.

**Optional Wing Bands.*

The Junior comes with optional wing mounting rubber bands and pre-installed pegs for a truly authentic look. Please note, this wing mounting system is not functional and should only be used in conjunction with the wing mounting bolts detailed previously.



**11A*. With the wing bolted to the fuselage, place the plastic trailing edge protector as shown.*



**11B*. Holding the trailing edge protector in place, attach the wing bands to the rear band peg, stretch up over the trailing edge of the wing, pull forwards and secure to the front band peg as shown.*

Assembly



12. With the model turned over and the battery access hatch open, connect all servo wires in the order stipulated by your receiver manufacturer. A Hobbyking OrangeRx R615 is shown and recommended.



13. Then install your receiver in the moulded pocket under the servo's by pushing it rewards as shown. (OrangeRx R615 shown).



Model assembly is now complete. Now perform a final check on all crews/bolts etc, ensuring that all are secure and firmly in place.

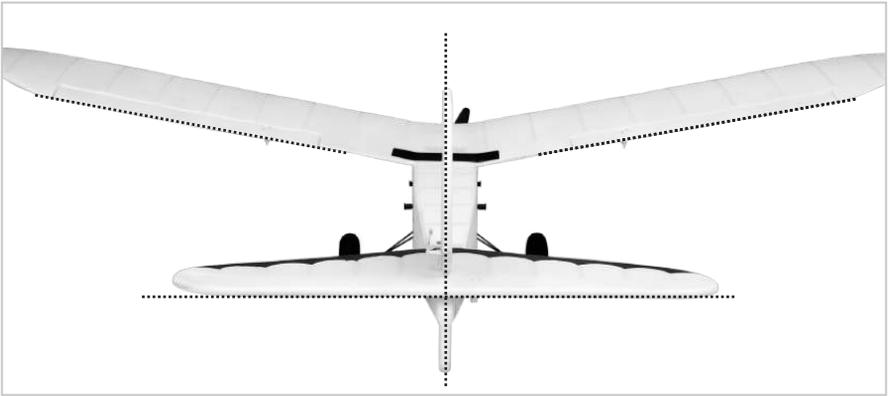
Battery installation (for flight)



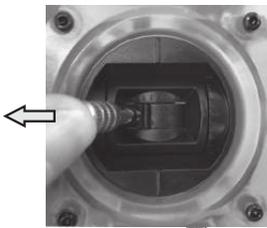
- To install your battery simply insert as shown here (NanoTech 1300mah 3S lipo recommended and shown). Note: Only fully insert your battery in the model when you are out flying. And remember, never power your model up without the transmitter turn on first.

Setting up the model

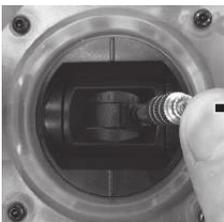
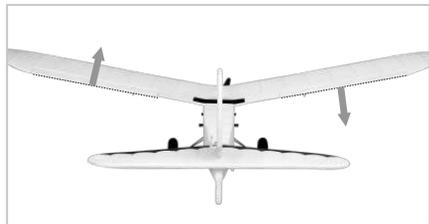
1. Once you have established a connection between your receiver and transmitter, turn on your transmitter followed by your receiver (by connecting your 1300mah 3s lipo to the speed controller (ESC)). Also, ensure the battery is fully charged.
2. Now that the electronics are powered up and the servo's centered, ensure that all control surfaces are level, if not, adjust by turning the control clevis's accordingly until the control surfaces are level as shown below.



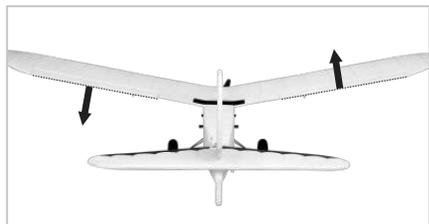
3. Ensure that control surfaces are moving in the correct direction with corresponding stick inputs as shown. If not, please reverse the servo direction via the settings menu of your radio.



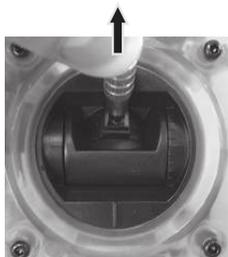
LEFT
AILERON



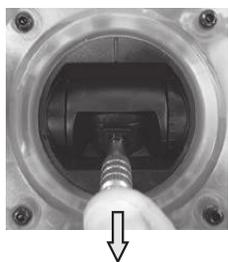
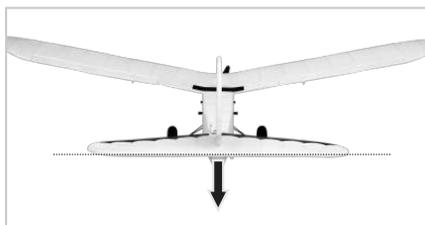
RIGHT
AILERON



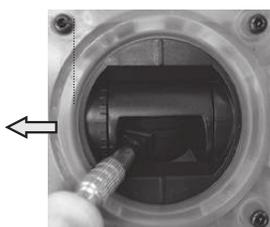
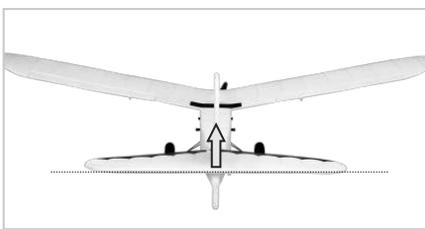
Setting up the model



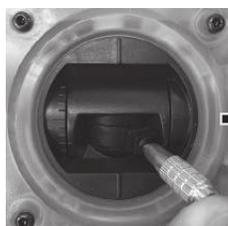
*DOWN
ELEVATOR*



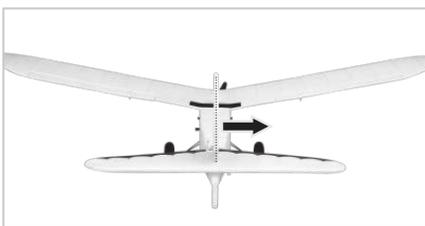
*UP
ELEVATOR*



*LEFT
RUDDER*

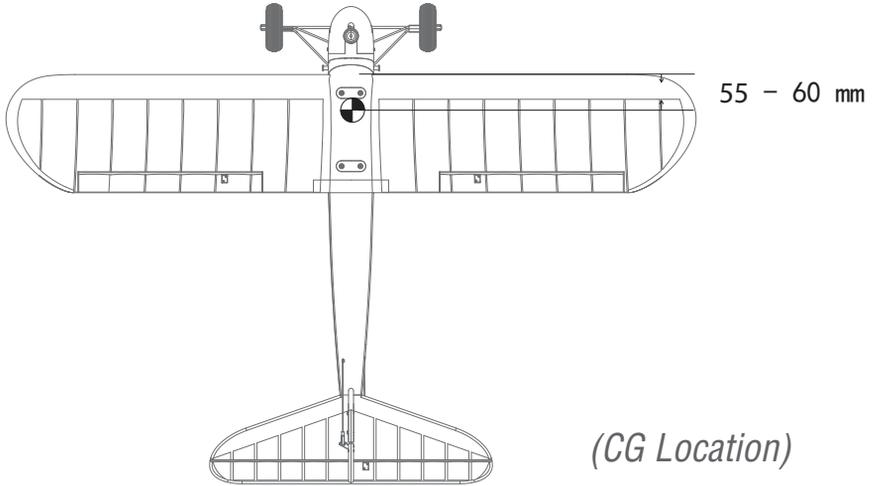


*RIGHT
RUDDER*



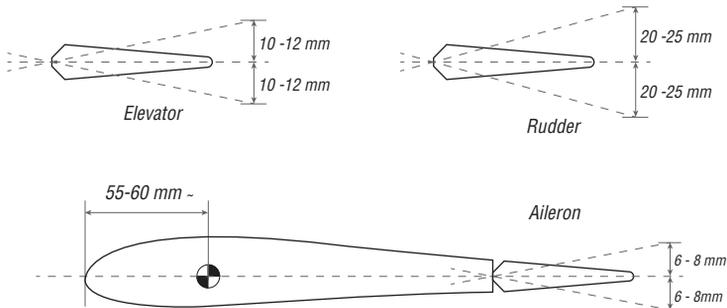
Setting up the model

4. The suggested CG for the Junior is approximately 55-60 mm from the leading edge of the wing. With a 1300mah 3S lipo installed, the model should balance between these points. The C/G given makes for a truly authentic vintage model flying experience, though you maybe want to adjust this later to better suit your own flying style.



5. The Junior is a very mild mannered model in flight when set-up correctly, the recommended throw settings here reflect this.

Control throws



* Elevator low rates 10mm, high 12mm in either direction from neutral. (travel, 120% up and 100% down)

* Aileron low rates 6mm, high rates 8mm in either direction from neutral.

* Rudder low rates 20m, high 25mm in either direction from neutral.

Model flying precautions

* Select your flight area carefully. Always choose an open space that is unobstructed but tree's and buildings and away from crowded area's. Avoid flying in area's with roads, electric/telephone poles /wires and water near by or within close proximity to full size air traffic.



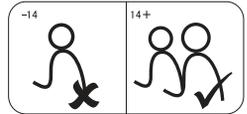
* Do not fly this model in poor weather. High winds, low visibility, inclement temperatures, rain and storms are to be avoided.



* Never attempt to catch this model whilst in flight. Even a slow moving model can cause harm to yourself and/ others and risks damage to the model.



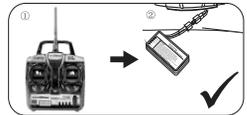
* This model is recommended for children no younger than 14 years old. All children, not matter what age, should always be supervised by a capable and responsible adult when operating this model.



* Always unplug your model battery when not in use. Never leave the battery installed in the model.



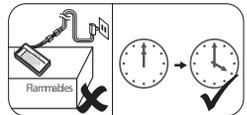
* Please remember to keep clear of the propeller at all times when your model flight battery is connected.



* Before flying, always turn on your transmitter first, then plug your flight battery into the model.



* After flying, always unplug your battery first, then turn off your radio transmitter.
Take caution when charging your batteries and follow in full your battery manufacturers safety guideline when doing so.





Before flying

- 1. Always range check your model before any flight (especially when flying a new model for the first time). Follow your radio manufacturers guideline for performing this check.*
- 2. Check all screw/bolts and mounting points are firmly secured, including control horns and clevis's.*
- 3. Only fly with a fully charged batteries (both in your radio and model). Failure to do so could result in loss of control, damage to the model and/or persons/property around you. Check your batteries are fully charged.*
- 4. With the model powered up (Transmitter on first, then receiver/model) check that all surface are free from damage/obstructions, moving in the correct directions and freely with stick input.*
- 5. Inspect the model and prop for any damage that may have occurred during transit and listen for any unusual sounds from the electronics when powered up. If in doubt, do not fly.*
- 6. With the model held securely and the prop free of obstruction, increase the throttle just slightly to confirm the rotation of the prop is correct. From the rear it should be seen to rotate in a clockwise direction.*
- 7. If this is your first flight with the model, double check the C/G is at the correct position. If not, adjust battery position inside model accordingly.*
- 8. If you are an inexperienced model pilot, seek the help and assistance of an experienced pilot to perform these final checks and to test fly the model for you.*

Flying the Junior

The Junior is very true to its vintage heritage in the air. She is easy to fly, doing so very gracefully, particularly in calm winds, at reduced speeds and with the smallest of stick inputs. Due to the high level of dihedral in the wing, the Junior is more suited to the lower throttle ranges and should require only minimal aileron input throughout the flight. For the best flying experience, use the rudder and elevator predominantly to control the model in the air and fly at 2/3rds throttle or below. The Junior is every bit the free flight model in design, and as such, will almost fly by itself in the right conditions. In addition to this, with its very low current draw and need for only low throttle inputs, you can expect flight times in excess of 20 minutes with a fully charged NanoTech 1300mah 3S lipo (or equivalent).

Take off requires little more than three quarters throttle. With this in mind, care should be taken to increase throttle slowly during taking off, letting the model climb out with minimal up elevator input. The high lift configuration of the model will have the Junior airborne in a very short distance. Be ready to correct any rolling/yawing after take off with rudder first, then aileron where necessary. Alternatively, you may hand launch the model. Simply grip the fuselage at the C/G position, increase the throttle to just above 3/4's, and launch the model level into wind with a firm toss, holding in a small amount of up elevator as you do. Trim the model as required, then enjoy the model at its best, low and slow with plenty of wide yawing turns.

If you wish to push the Junior, it will perform basic aerobatic maneuvers, loops and stall turns all being possible with only a slight increase in throttle and stick movements. For landings simply line the model up into wind and with a very low throttle setting, the Junior will transcend into a perfect controlled decent, still being completely controllable should you need to adjust its course. Just before touch down, reduce the throttle further whilst flaring the model with an increased amount of up elevator input just before the wheels touch down. With the fixed tail skid, ground control/taxing is possible, but you'll be flying quicker if you walk out and collect the model from the landing strip!

Happy flying and thank you for choosing Durafly.



Junior Flying tips

- * *It is generally not recommended to fly the Junior in winds of 10mph or more. Though the model will handle these stronger wind conditions, the Junior is best suited to, and most enjoyable in, those lazy calm afternoon's for which its predecessors were originally designed.*
- * *Too much aileron input can result in a less enjoyable flying experience. Due to the high angle of dihedral in the wings, it is recommended that the ailerons are used only when needed for general flying. The rudder is much more authoritative and controlled.*
- * *It is not recommended to fly the model at full throttle constantly. The layout out and design of the Junior is much more suited to flying at a throttle setting no high that 3/4, as is common with models of this vintage design.*
- * *A high rate setting on the rudder is suggested for improved ground handling. As the Junior has a fixed tail skid, you'll want as much rudder movement on the ground as possible.*
- * *Due to the low demands on the power system to keep the Junior flying comfortably, long flight times can be expected off of a single 3S battery. Take 4 or 5 Nanotech 1300mah lipo's from Hobbyking and you'll be able to fly all afternoon without the need to charge.*
- * *A small optional 25g weight has been added to the box. The Junior flies very much like the Vintage model it was inspired by without this weight, but if you wish to bring the CG forward a little, we suggest using this weight. To install, simply remove the cowl and glue the weight firmly in place with a hot glue gun or other suitable glue.*

Thank you again for purchasing this Retro series Junior from Duralfy. We hope you have many happy, lazy summer afternoon's flying it. Don't forget, spare parts are available for this model, please see oppersite for details.

Spare parts listing



Wing Set
No.:041000156-0



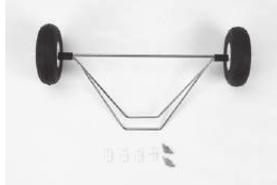
Fuselage
No.:041000155-0



Horizontal stabilizer/
elevator and tail mount
No.: 041000158-0



Vertical stabilizer/rudder
No.:041000157-0



Undercarriage Set
No.:041000159-0



Wing accessories
No.:041000160-0



Dummy Motor
No.:041000162-0



Motor DST-1100
No.: 9031000158



Cowling
No.:041000161-0

- Spare parts are available directly from hobbyking.com



Trouble shooting

<i>Problem</i>	<i>Cause</i>	<i>Solution</i>
<i>Motor does not run</i>	<ol style="list-style-type: none">1. Battery is not fully charged.2. Transmitter battery low.3. Motor wires not connected.4. The motor does not work due to impact or damage.5. The frequency binding of the radio system has failed.6. Throttle protection (lock signal of throttle channel)..	<ol style="list-style-type: none">1. Charge the batteries.2. Install a full charged battery.3. Check for connection between the ESC and motor.4. Replace motor.5. Consult Radio manual and go through bind procedure again.6. push the throttle joy-stick to its Zero position.
<i>Control surfaces not moving with stick input</i>	<ol style="list-style-type: none">1. The servo cable is plugged correctly.2. The servo is damaged	<ol style="list-style-type: none">1. Check the connection of the servo cable.2. Replace servo.
<i>Can not fly straight</i>	<ol style="list-style-type: none">1. The rudder is not in the center position of the airframe2. The main wing is not fixed in the center position of the airframe.	<ol style="list-style-type: none">1. Adjust the trim switch on the transmitter.2. Re-possition the main wing.
<i>Does not climb</i>	<ol style="list-style-type: none">1. The battery is not fully charged.2. Elevator servo is reversed.3. CG too far backwards	<ol style="list-style-type: none">1. Charge the battery.2. Change servo direction via Tx.3. Move battery forwards
<i>Limited Radio range</i>	<i>Transmitter/Receiver batteries are flat</i>	<i>Install new batteries</i>



DURAFLY[®]

FC CE    ↑
MADE IN CHINA 14

JUNIOR
Plug and Fly